PROJECT COVER SHEET

SPR Number: 23004523

Name: Amy Waite

Sign declaration:

_____

University of Reading

School of Psychology and Clinical Language Sciences

Department of Psychology

PROJECT COVER SHEET

March, 2018

INVESTIGATING GROUPS OF PERFECTIONISTS AND DIFFERENTIAL RELATIONSHIPS WITH TEST ANXIETY: A CROSS CULTURAL COMPARISON OF BRITISH AND DANISH UNIVERSITY STUDENTS

SUPERVISORS: Professor Patricia Riddell, Dr Allán Laville

Word count (excluding Appendices, contents page, reference list):

7968

Declaration (please tick the box and sign in the box above)

I declare that this is all my own work, that all the required ethical procedures were followed correctly, that all sources used are acknowledged using standard academic referencing and quotation where necessary, and that the word count is accurate. ☐

Contents

Abstract ……3

Introduction ……..4

Method ……16

Results ……21

Discussion ……27

References ……35

Appendices ……44

Abstract

Perfectionism refers to a multidimensional personality construct accepted to have both positive and negative facets. Only recently in research has it come to light that different perfectionist types exhibit differential relationships with test anxiety. To date however, the findings are not in agreement as to which perfectionist types relate to which test anxiety dimensions. The present study used analyses of variance to examine the relationships between three established perfectionist types (adaptive, maladaptive, non), five test anxiety dimensions including total test anxiety, culture and gender. Male and female university students from Great Britain (*N* = 122) and Denmark (*N* = 51) completed two self-report measures, the *Almost Perfect Scale-Revised* and the *German Test Anxiety Inventory*. Results revealed that maladaptive perfectionists exhibited the highest scores on all five TA variables, including total test anxiety score. Unexpectedly, non-perfectionists exhibited the second highest scores on all test anxiety dimensions. Culture did not make have a significant effect on perfectionism or test anxiety. Females exhibited higher test anxiety scores on three out of five test anxiety dimensions including total test anxiety. Implications for understanding specific perfectionism-test anxiety relationships are discussed.

Introduction

Perfectionism

Perfectionism is conceptualised as a multidimensional personality trait (Stoeber, Feast & Hayward, 2009), characterised by a tendency to set oneself high personal standards and critically evaluate one's behaviour against these standards (Flett & Hewitt, 2002). The term may refer to how a person acts across multiple situations or to how a person is within a specific situation (Rice, Richardson & Ray, 2015). In this study, the term refers to the latter meaning regarding a specific situation, that being the context of university exams. Suggestively, the university environment is one of the most relevant contexts in which to investigate perfectionism (Suddarth & Slaney, 2001).

The multidimensional nature of perfectionism and the relationships it shares with adaptive and maladaptive traits and outcomes has generated increasing interest amongst researchers in recent decades (Mills & Blankstein, 2000). Conceptualising perfectionism as multidimensional opens up the possibility that some aspects of perfectionism are associated with psychopathology and others are not (Lundh, Saboonchi & Wångby, 2008). Notably, the multidimensional view has been criticised for "failing to distinguish between perfectionism and its associated features" (Riley & Shafran, 2005, p. 369). For example, researchers have suggested that perfectionist types with adaptive elements are only looking at constructs related to perfectionism, instead of integral perfectionism elements and thus have little clinical relevance (Shafran, Cooper & Fairburn, 2002). Shafran et al. (2002) proposed the construct of clinical perfectionism, characterised by over-dependence on self-evaluation in the pursuit of one's goals, despite aversive consequences. This conceptualisation shares

a likeness to Burns' idea of perfectionists, who he described as persons who define themselves in terms of their ability to reach their goals (Burns, 1980).

Despite criticisms regarding the multidimensionality of perfectionism, empirical research consistently lends itself to three distinct types: adaptive perfectionism (AP), maladaptive perfectionism (MP) and non-perfectionism (NP) (e.g., Rice & Ashby, 2007). Therefore, in the present study, it is these types that are of interest when investigating relationships with particular dimensions of test anxiety (TA). Support for the existence of adaptive and maladaptive perfectionists also comes from qualitative research. For example, Neumeister (2004) found themes such as pride in successes and external attributions for failures in self-oriented perfectionists (SOPs - regarded as an adaptive type, e.g., Stoeber & Otto, 2006). Conversely, socially-prescribed perfectionists (SPPs - a maladaptive type, e.g., Mills & Blankstein, 2000) reported themes including internal attributions for failure and overgeneralising the consequences of failure. Additional evidence from qualitative studies comes from Rice, Bair, Castro, Cohen and Hood (2003). From their qualitative and quantitative analyses, Rice et al. (2003) concluded that MPs overemphasise personal responsibility for their perceived inadequate efforts to achieve their high standards (e.g., "must" perform well), whilst APs have greater personal control and fewer distorted cognitions. Therefore, qualitative studies support a similar framework of perfectionists as quantitative do, indicating clear differences between APs and MPs.

The idea that two forms (normal and neurotic perfectionism), could be distinguished stemmed from early conceptual work by Hamachek (1978) who asserted that both types share a tendency to set high personal standards. However, the maladaptive or

neurotic type do not gain satisfaction from goal pursuit due to their inflexible belief that they will never do things well enough. This conceptualisation has remained unchanged over the years. Now, MPs are generally regarded as persons who set unrealistically high standards, leaving little margin for error (Lo & Abbott, 2013). Suggestively, Shafran et al.'s (2002) conceptualisation of clinical perfectionism shares close resemblance with the MP type. Historically, MP has received the most attention (Blackler, 2011) due to the dominant view that it was dysfunctional and indicative of psychopathology (Stoeber & Otto, 2006). For example, empirical research linked MP to a plethora of negative outcomes including, but not limited to, low self-esteem (e.g. Rice, Ashby & Slaney, 1998) and many other mental health problems (Burns, 1980).

Conversely, for individuals with normal or AP, striving for high standards is proposed to entail satisfaction and accomplishment, thus enhancing self-esteem (Hamachek, 1978). Now, researchers agree that AP combines high self-performance expectations, flexibility regarding personal achievements (Rice & Ashby, 2007) and low levels of negative self-evaluation (Eum & Rice, 2011). Findings in early work (e.g. Frost, Heimberg, Holt, Mattia & Neubauer, 1993; Ashby, Mangine & Slaney, 1998 as cited in Periasamy & Ashby, 2002) and more recent work (e.g. Weiner & Carton, 2012; Rice, Ashby & Slaney, 2007) have demonstrated associations between AP, positive affect and conscientiousness and inverse relations to depression leading to it being perceived as beneficial (Klibert, Langhinrichsen-Rohling & Saito, 2005).

The final group in this study are non-perfectionists (NPs) who remain as a residual subgroup (Arana & Furlan, 2016) and are defined as individuals holding low levels of perfectionistic strivings (Stoeber & Otto, 2006). This is evidenced in cluster analyses

of perfectionist groups, where NPs hold consistently lower standards than the other two perfectionism groups (e.g., Martin & Ashby, 2004; Rice, Ashby & Gilman, 2011). Research comparing the three perfectionist types have found that, although NPs do not experience symptoms, such as TA, as intensely as APs and MPs (e.g., Pacht, 1984), they do not yield benefits gained by APs. For example, Grzegorek, Slaney, Franze and Rice (2004) found that APs had significantly higher self-esteem than both MPs and NPs. Other research has shown that APs and MPs exhibit higher levels of academic self-efficacy than NP (Khani, Abdi & Nokhbezare, 2013). However, this result was attributed to the way the perfectionism groups were formed. For example, MPs had high scores on the SOP subscale, whereas NPs reported low scores on this subscale. Given the moderate correlation between SOP and self-efficacy, it logically follows that MPs would seemingly exhibit high self-efficacy. Therefore, it is important to interpret these results with caution.

Test Anxiety (TA) and Perfectionism

TA is a situation-specific phenomenon (Stoeber, 2004) characterised by a tendency to react with heightened anxiety in response to contexts testing one's performance (Hodapp, Glanzmann & Laux, 1995). Early empirical research (e.g., Zeidner, 1998) and more recent research has found that high TA levels show inverse relations with measures of achievement (Putwain, Connors & Symes, 2010), making it a cause for concern, particularly in student populations. Once regarded as a unidimensional construct, TA is now recognised to have distinct cognitive, affective and behavioural components (Zeidner & Matthews, 2005).

Liebert and Morris (1967) first introduced two of these components. The cognitive component, referred to as “worry”, entailed thoughts about failure. The affective component labelled “emotionality”, alluded to one’s awareness of their physiological symptoms, including dizziness, nausea or increased heart rate (Deffenbacher, 1980), triggered by the evaluative situation. Later research by the same authors revealed that these components exhibited differential relationships with performance (Morris & Liebert, 1970). For example, when controlling for overlap between the components using partial correlations, worry was associated with low performance levels, whereas emotionality was not. Following this, Hodapp (1991;1995) sought to explore which dimensions best captured TA, leading to the invention of the German Test Anxiety Inventory (TAI-G). The TAI-G encompasses four subscales: worry, emotionality, interference and lack of confidence. This measure was later validated in English (Hodapp & Benson, 1997) and has gained extensive support for its validity (Harpell & Andrews, 2010).

Given perfectionists’ high standards for their achievements, it would be expected that evaluative situations, such as those at university, may generate distress. Accordingly, many studies have found relationships between perfectionism and TA in university samples (e.g., Bieling, Israeli, Smith & Antony, 2003; Weiner & Carton, 2012). For example, Weiner and Carton (2012) found that evaluative concerns perfectionism (ECP), accepted as a maladaptive form (Bieling et al., 2003), showed moderate correlations with high TA levels. Conversely, personal standards perfectionism (PSP), regarded as an adaptive form (Stoeber & Otto, 2006) was negatively associated to TA. Partial correlations to better understand the relations between the major variables showed that even after controlling for PSP, ECP still correlated strongly with TA.

For future research, Weiner and Carton proposed investigating the differences between ECPs and PSPs further. They suggested that ECPs may perceive task demands as too difficult and thus experience intrusive thoughts or ruminate on personal drawbacks. In their study, TA was assessed using the Test Anxiety Scale (TAS, Sarason, 1984), a self-report measure comprising 37 true/false items (e.g., “During a test, I find myself thinking of the consequences of failing”). Suggestively, due to the nature of the responses the questionnaire elicits, this measure does not produce rich data on TA when compared to more well-established measures such as the TAI-G. In the present study, use of the TAI-G which measures four major TA components is able to tap into whether individuals experience symptoms such as intrusive thoughts, thus providing a clearer picture of which mechanisms underpin the experience of TA.

Although many studies have investigated the general relationship between perfectionism and TA, there is evidence to suggest that particular perfectionist groups exhibit differential relationships to TA (Stoeber et al., 2009). In their study, Stoeber and colleagues used a group-based approach to categorise participants (second year university students) as either SOPs, or SPPs. SPP correlated positively with lack of confidence and interference, whilst SOP correlated negatively with these two dimensions. These findings support the extant evidence that APs tend to show higher levels of positive characteristics than MPs and NPs (Stoeber & Otto, 2006). The authors suggested that holding high personal standards, instead of paying attention to others’ expectations (e.g., in SPP), may contribute to better focus in test situations. Unexpectedly, there was no relationship between SPP and worry whereas for SOPs there was a positive relationship with this dimension. This was not the same result found more recently by Arana and Furlan (2016) where, despite MPs exhibiting the

highest worry scores, both the MP and AP groups scored similarly high scores. Given that the trait perfectionism is characterised by the setting and pursuit of high standards, it is not surprising that aiming for these standards, in itself, may induce worry, regardless of whether one is adaptively or maladaptively perfectionistic.

It should be highlighted that in Stoeber and colleagues' research, perfectionists were not explicitly characterised as APs or MPs. For example, although Stoeber and Otto (2006) in their review suggest that SOP is a positive form, in this particular study, SOP was labelled as ambivalent due to its associations with both positive and negative outcomes. Therefore, as the conceptualisation of SOP is neither adaptive or maladaptive suggests that the findings regarding specific relationships between perfectionism type and TA dimensions cannot be generalised to the present study. Furthermore, the correlational design of the study has implications for drawing inferences between perfectionism and TA dimensions.

Cultural influences on Perfectionism and TA

Another relevant issue for study in the context of perfectionism and TA is how these phenomena manifest cross-culturally. From a cross-cultural perspective TA is one of the most studied psychological constructs, with research from all continents (Ringeisen, Buchwald & Hodapp, 2010). Despite TA being accepted as a common and homogenous experience (Seipp & Schwarzer, 1996), reported TA levels vary across cultures (Bodas & Ollendick, 2005) due to the different values, norms and socialisation practices. In turn, these are believed to affect not only levels of TA but also the type of TA symptoms experienced (Lowe & Ang, 2012).

Given the vast body of international literature on TA, it is surprising that TA has been neglected by researchers in Great Britain (Putwain, 2007). Consequently, there is limited knowledge on TA in Britain and whether this is contextualised by characteristics of the British education system (Putwain, 2009). As students in Britain move through education, it is typical to experience a greater frequency of testing. With this comes increased pressure and expectations, a reason proposed behind the increased prevalence of TA (McDonald, 2001). Research into TA or perfectionism in Denmark is also scarce, particularly in university students. In one study, Danish students reported higher satisfaction in school when compared to adolescents from the USA (Ferguson, Kasser & Jahng, 2011). This was thought to be due to Danes' perception that their parents and teachers allowed them to make independent life choices, thus leading to more positive experiences generally and in school. Interestingly, the authors attributed the differences in subjective satisfaction to the countries' differences in cultural orientation, as described below.

The concept of individualism/collectivism (I/C) refers to a cultural syndrome where individualist cultures prioritise individual goals and collectivist cultures emphasise group goals (Triandis, 1995). Within these cultures, Triandis and Gelfand (1998) made a further distinction between horizontal and vertical societies (H/V), one that has proved useful in numerous studies to distinguish people from I/C cultures (Bodas & Ollendick, 2005). Triandis and Gelfand suggest that members of both individualistic and collectivist cultures can be 'horizontal', where the social equality of individuals is emphasised, or 'vertical', where hierarchy and status are accentuated. This distinction emerged from "the observation that American or British individualism differs from… Danish individualism" (Shavitt, Torelli & Riemer, 2010, p.310).

Although Britain and Scandinavia are both considered as individualist cultures, Britain is viewed as being a vertical individualist (VI) society, where individuals are concerned about their societal status and want to distinguish themselves from others through competition (Shavitt, Johnson & Zhang, 2011). For example, in Britain the social structure is still largely defined by class, as demonstrated from the results of The Great British Class Survey (GBSC - Savage et al., 2013). Class depends on factors such as education level, income and occupation type, which still prevails today ("British Social Hierarchy", n.d.). Results from the GBCS also showed that 66% of graduates still come from the Elite and Middle Classes (Appendix A), suggesting that relative position in the class hierarchy remains a significant factor in educational achievement.

In contrast, Denmark is viewed as horizontally oriented (Nelson & Shavitt, 2002) where individuals are disinterested in high societal status (Triandis & Gelfand, 1998) and "show aversion to conspicuously successful persons and to braggarts" (Shavitt et al., 2011, p.3). For example, within the Danish culture the unspoken code of conduct 'janteloven' (the Jante Law) coined by Sandemose (1933) refer to 10 fictional laws, originally meant as an ironic criticism of narrow-mindedness, which can be encapsulated in the sentiment: no individual should perceive themselves as better than anyone else. The Jante Law is still observed to operate throughout Denmark (Booth, 2014), including in Danish education. Therefore, the idea that there are no elites, nor any advanced or competitive school programmes is ingrained into children very early in life (Mellish, 2014). Given the paucity of research into perfectionism or TA in Britain and Denmark, there is a need to investigate whether these psychological constructs are affected by countries' cultural orientation.

Gender and TA

A large body of research implicates gender as a primary feature in the experience of TA (e.g., Seipp & Schwarzer, 1996; Bandalos, Yates & Thorndike-Christ, 1995). In one meta-analysis of over 500 studies, TA levels were consistently higher for females than males (Hembree, 1988). These gender differences appeared to decrease in college and university (Hembree, 1988). As over 70% of the studies included in the meta-analysis used undergraduate samples, there is substantial support that sex differences observed in TA levels may be diminished in university students. However, recent research has detected TA gender differences in university students. For example, Kavanagh, Ziino and Mesagno (2016) investigated cross-cultural differences in perfectionism and TA in students from Australia and the USA. In line with past research, females exhibited higher TA score than males. Follow-up tests revealed that females had significantly higher total TA and emotionality, but not worry. The authors concluded that females are generally more anxious than males.

Some research indicates that males and females exhibit differential relationships with TA and perfectionism. For example, in one study using university students (*N* = 134), of which 62% were female, correlational and regression analyses indicated that females who had concerns regarding their ability in achievement situations were more likely to be MPs when compared to males (Eum & Rice, 2011). Almost 50% of the variance in TA could be attributed to perfectionism and gender. The authors concluded that highly anxious students are likely to be females that are MP. Similarly, using multiple regression analyses, Herrigel (2011) found that being a MP and female were both significant predictors of TA. Although MP made a larger contribution in predicting

TA, being female still made a significant contribution to account for the 65% variance in TA scores.

One proposed explanation for females exhibiting higher TA scores is that females tend to report higher scores on the emotionality dimension, whilst both genders experience similar levels of worry (e.g., Deffenbacher, 1980 as cited in Cassady & Johnson, 2002). Contrary to the evidence, results from Cassady and Johnson's research refuted the notion that gender differences are due to females' heightened levels of emotionality. Their cognitive framework suggests that perceived threat in evaluative situations may predict TA. This suggestion is consistent with research by Arch (1987) who found that females were likely to report themselves as having lower confidence levels in their ability and being less capable when performance evaluation was made salient. When there was not a salient evaluative component, the opposite pattern was seen regarding females' perceptions of their abilities. These findings indicate that it is the perception of evaluative situations as threatening that may increase TA levels in females. This is also in line with the cognitive appraisal model of TA by Schwarzer and Jerusalem (1992, as cited in Cassady & Johnson, 2002), supporting the notion that females' performance is negatively impacted by the threat of test situations.

The present study

To our knowledge, no prior studies have investigated the specific relationships between empirically clear forms of perfection and TA dimensions in British and Danish students. This research aims to advance knowledge and understanding of the ways in which different styles of perfectionism might manifest in the experience of TA and thus help inform future research. For example, identifying relationships between MPs and

certain aspects of TA may serve as a good starting point to develop psychological strategies tapping the mechanisms which underpin specific TA dimensions. Therefore, the first aim was to investigate whether three specific perfectionist types (adaptive, maladaptive and non) exhibit specific relationships with four dimensions of TA and individuals' total TA score. Based on existing research indicating differential relationships between perfectionism and TA (e.g., Arana & Furlan, 2016; Stoeber et al., 2009) our hypotheses are as follows:

H1: MPs will have the highest total TA scores, followed by APs, and NP will have the lowest total TA score.

H2: MPs will report significantly higher levels of the TA dimensions: emotionality, lack of confidence and interference than APs and NPs.

H3: On the TA dimension worry, MPs and APs will exhibit similar (high) levels of worry and NPs will score significantly lower on this dimension.

Our research also extends previous literature by examining whether the aforementioned relationships are affected by differences in cultural orientation across Britain and Denmark, therefore addressing suggestions for more cross-cultural research into perfectionism (Mobley, Slaney & Rice, 2005). Given the societal differences in these two countries it was hypothesised that:

H4: In Denmark, there will be fewer perfectionists (both APs and MPs) and more NPs than in England and that Danish students will experience less total TA.

The final aim was to build on previous literature that showed gender differences in TA, by examining this relationship whilst controlling for the effect of culture. Taking into account the large body of research into gender, our final hypothesis is:

H5: Regardless of nationality, females will express higher levels of total TA than males, particularly on the TA dimension emotionality.

Method

Pilot Study

Prior to testing, a pilot study was undertaken to test whether our proposed research protocol was realistic and feasible (Van Teijlingen & Hundley, 2001). As the survey was in English, it was important to assess whether any of the questions were inappropriate for Danish participants. This was not anticipated to be a problem due to the Danes' rank in 2017 as the third best non-native English speakers in the world (Education First, 2017). In the pilot, five Danish students and eight British students completed all three surveys and were asked for feedback using open ended questions. Generally, there were no comprehension problems reported by British or Danish students. See Appendix B for detailed participant feedback from the pilot.

Participants

The study's sample consisted of 122 British (M_{age} = 20.21, *SD* = 1.43, with 108 females and 14 males) and 51 Danish students (M_{age} = 23.45, *SD* = 2.22, with 33 females and 18 males) with a mixture of undergraduates (Britain, *N* = 106; Denmark, *N* = 29) and postgraduates (Britain, *N* = 16, Denmark, *N* = 22). Two criteria had to be met for students to considered as British or Danish. Firstly, subjects must have completed their high school education in that respective country and, at the time of data collection, be studying at a university in that country. Secondly, participants' language of their country of study had to be their native language. Students that did not fulfil these criteria were excluded from analyses.

Recruitment

All students took part voluntarily and completed the survey at a time and place convenient for them. From the students involved this study, a large majority were recruited from two primary universities: The University of Reading (UoR), England and Aarhus University (AU), Denmark, both of which are public universities with a large emphasis on research. British participants were recruited primarily through the University of Reading's psychology participant pool SONA, an online software facility enabling advertisement of prospective research studies to current 1st and 2nd year undergraduate students. Participants recruited through SONA were awarded course credits upon completion, which contributed to their degree. British students were also recruited through social networking websites (i.e., Facebook) which meant participants came from a variety of British universities. As there was no equivalent of SONA at AU, Danish students were recruited through social networking sites and were offered the incentive to be entered into a prize draw to win an Aarhus City gift card worth 250 Danish kroner (approximately £30.00), in exchange for their participation.

Materials

Demographic information. Participants' demographic information was acquired through a demographic questionnaire which asked subjects to provide the following information: name, age, email address (for the purpose of contacting the winner of the gift card in the Danish participant subgroup), gender, location of high school and university, academic year or semester (as appropriate) of study and native language (Appendix C).

The Revised Almost Perfect Scale (*APS-R* – Slaney, Rice, Mobley, Trippi & Ashby, 2001). The APS-R is a self-report inventory used to measure the multidimensionality of the perfectionism construct. In this study, it will be used to categorise participants into one of the following groups: adaptive perfectionist (AP), maladaptive perfectionism (MP) or non-perfectionist (NP). There are 23 items within which there are three subscales: High Standards (7 items; e.g. “I expect the best from myself”), Discrepancy (12 items; e.g. “I am hardly ever satisfied with my performance”) and Order (4 items; e.g. “I am an orderly person”). To make the survey appropriate to a university sample, any school-specific items (namely, item 13) were modified to apply to university students (see Appendix D for full item list). As the study sought to investigate perfectionism in the context of university, participants were instructed to answer questions only in relation to their academic life, instead of their personal life. Respondents are required to provide their level of agreement on a 7-point Likert scale, where 1 = strongly disagree to 7 = strongly agree. In general, researchers have agreed that the High Standards subscale is associated with more positive aspects of perfectionism (e.g. Rice & Slaney, 2002). Conversely, negative aspects of perfectionism are suggested to be captured by the Discrepancy subscale (Slaney et al., 2001). Psychometric support for the APS-R subscales is strong (Rice & Ashby, 2007) with internal consistency coefficients ranging between .82 and .92 (Slaney et al., 2001). Further, a principal components factor analysis of the APS-R by Suddarth and Slaney (2001) produced evidence which supports the three subscales, accounting for 68% of the variance.

The German Test Anxiety Inventory (TAI-G – Hodapp, 1991; 1995). The English version of the TAI-G (Hodapp & Benson, 1997) was used in this study to generate

scores on 4 specific TA dimensions as well as a total TA score. This self-report inventory comprises 30 items, of which 10 measure the dimension of 'worry' (e.g. "I worry about my results"), 8 measuring 'emotionality' (e.g. "I tremble with fear"), 6 for 'lack of confidence' (e.g. I know that I can rely on myself", reverse keyed) and 6 for interference (e.g. "My concentration is interrupted by interfering thoughts"). A total TA score is produced by summing all 30 items (see Appendix E for full item list). Participants were required to rate their agreement level on the same 7-point scale as in the APS-R and were instructed to base their answers on the thoughts and feelings they experienced in their most recent in exam. Support for the psychometric properties of the TAI-G (English version) has been demonstrated, particularly in university students (Harpell & Andrews, 2010). A principal component analysis by Stoeber (2004) of the subscales' items resulted in four eigenvalues >1, which corresponded to the four subscales. Further, Cronbach's alpha of .95 for the TAI-G total score and scores ranging from .81 and .92 for the TAI'G's subscales support the inventory's internal reliability.

Ethical considerations

Ethical approval was granted by the School (of Psychology and Clinical Language Sciences) Research Ethics Committee, at the UoR (Appendix F) and the UoRs Research Ethics Committee (Appendix G). Ethical approval from the UoR Research Ethics Committee was required on the following grounds: Research was undertaken outside of the UK (more specifically at AU, Denmark. Approval from AUs Ethics committee was gained prior to testing); the nature of the study encompassed sensitive topics which had the potential to cause psychological distress (for example, the TAI-G required participants to think back to the last time they sat an academic test); the survey

explored clinical aspects (i.e. anxiety), although no measures were used as diagnostic tools. To accommodate for these factors, participants were briefed through the information sheet (Appendix H), which detailed the nature of the study and the study's purpose, so that they were aware of these issues before choosing to take part. Participants were then debriefed at the end of the survey and reminded that the experience of academic anxiety is very normal and common. Should participants wish to seek any further support for any test anxious feelings, listed contact included: details for the UoR study advice team, the UoR student well-being page and AUs wellbeing page.

Procedure

Participants completed the survey through GoogleDocs, a web-based survey tool. Participants were firstly presented with the information sheet, followed by a consent form (Appendix I). After reading these documents, participants were presented with a 'yes/no' question to confirm that their voluntary consent was provided. Participants were also asked to provide their full name, which they were informed would be taken as their signature. The survey took participants approximately 10 minutes to complete. Data collection began in January, 2018 and was completed within this month.

Statistical methods and analytic strategy

To categorise participants into one of the three perfectionist groups (AP, MP, NP), the cut-off scores recommended by Rice and Ashby (2007) on the APS-R Standards and Discrepancy subscales were used. Following the authors findings that the Order subscale was not useful in classifying perfectionists, this subscale was not used in the present study. Rice and Ashby advocate a score of 42 or above on the Standards

subscale as the cut-off for perfectionism. A score below 42 classifies the subject as a NP. Subsequently, the authors advise a cut-off of 42 on the Discrepancy subscale to distinguish APs (a score below 42) and MPs (A score equal to or above 42).

The first statistical strategy involved a two-way multivariate analysis of variance (MANOVA), to address hypotheses 1-4. Perfectionist groups (AP, MP & NP) and nationality groups (Britain and Denmark) were our two between-subjects independent variables (IVs) and our five dependent variables (DVs) comprised the 4 TAI-G subscales (worry, emotionality, lack of confidence and interference) and total TA. For the purpose of investigating the relationship between perfectionism and TA (H1-H3), participants were grouped by perfectionist type, thus including all participants regardless of nationality. For H4, to specifically investigate culture, participants were grouped by their respective nationality. Significant ANOVAs were followed up by Tukey-Kramer post-hoc tests, as recommended by Smith (1971), given that the group cases were unequal. To address the final hypothesis (H5) that females would exhibit higher total TA scores, participants were grouped by gender. A multivariate analysis of covariance (MANCOVA) was conducted using nationality as a covariate, gender as the IV and the five TA variables, described above, as the DVs.

Results

Preliminary analyses

Missing Data and Outliers.

Seventeen participants did not fulfil the criteria to be classed as either British or Danish and were therefore excluded from the final analysis. With this, the final sample size was *N* = 173.

Prior to running the analysis, data was examined to check that it met the required assumptions. Our data met assumptions 1-5, but deviated slightly in assumptions 6-9 (see below).

Assumption 6: Regarding the first IV (perfectionism), Shapiro-Wilks test revealed that MPs and NPs violated the assumption for multivariate normality on the two out of five of our dependent variables (MP worry, p = .020; MP emotionality, p = .040; NP worry p = .039; NP emotionality, p = .037). On the second IV (culture), Shapiro-Wilks test revealed that the British sample violated the assumption for multivariate normality on the dimension worry (p = .004). Log10 was used to transform the data but did not make a difference to normality. Therefore, the original data was retained for analysis.

Assumption 7: The scatterplot matrix to examine the linear relationships between our dependent variables for all groups of our two independent variables indicated that this assumption had been met. However, linear correlations revealed that the relationship between culture and the TA dimension lack of confidence was not significant (.081). Furthermore, the relationships between perfectionism and three out of five dependent variables were also not significant (worry, p = .821, emotionality, p = .231, total TA, p =.094.

Assumption 8: Levene's test for Equality of Variances produced a significant result for the TA dimension emotionality (p = .032) suggesting that group variances were significantly different, thus violating this assumption.

Assumption 9: Amongst our dependent variables, the TA dimensions worry and emotionality exceed the suggested cut-off of .9 (Hair, Black, Babin, Anderson, & Tatham, 2006) thus violating the assumption of no multicollinear relationships amongst any pair of DVs (worry and total TA = .907, emotionality and total TA = .929).

Although the present data deviated slightly from the assumptions, transformation attempts failed to improve the fit of the data to meet these assumptions. There is substantial evidence that all four MANOVA test statistics are robust to small deviations from normality (Field, 2009; O'Brien & Kaiser, 1985). For example, Everitt (1979) found that in the majority of cases which deviate from normality, the type I error rate is impacted minimally. Therefore, all variables were treated as normal.

Perfectionism, culture and test anxiety

The mean and standard deviations (SDs) for each perfectionist group on the TAI-G are displayed in Table 1 (H1-H3). The mean and SDs for each culture group on total TA are displayed in Table 2 (H4). A two-way MANOVA was conducted to examine the effect of perfectionism and culture on the 5 TA variables (H1-H4). The MANOVA revealed that there was no significant interaction effect between perfectionist type and culture, Wilks' $\Lambda = 0.97$, $F(8, 328) = .581$, $p = .794$, indicating that the effect of culture on all TA variables did not differ across perfectionist groups (see Appendix J for a summary). The main effects of the independent variables (perfectionism and culture) were then investigated separately. Wilks' criterion revealed a significant effect of perfectionism alone, Wilks' $\Lambda = .774$, $F(8, 328) = .5.61$, $p = <.001$), but not culture, Wilks' $\Lambda = .960$, $F(4, 164) = 1.72$, $p = .148$.

Table 1 *Mean & SD for Test Anxiety when sample is grouped by perfectionist type (N = 173)*

	Adaptive Perfectionists (*N* = 15)		**Maladaptive Perfectionists (*N* = 51)**		**Non Perfectionists (*N* = 109)**	
Measure	**M**	**SD**	**M**	**SD**	**M**	**SD**
TAI-G						
Worry	40.73	11.266	57.16	9.300	50.03	9.217
Emotionality	23.20	8.546	36.57	12.530	32.63	9.026
Lack of confidence	15.87	4.406	25.51	7.855	23.49	6.205
Interference	16.93	5.535	26.61	8.755	26.09	7.153
Total TA	96.73	25.166	145.84	34.186	132.23	26.010

Table 2 *Mean and SD of total test anxiety score across culture (N = 173)*

	N	**M**	**SD**
Great Britain	122	137.75	30.71
Denmark	51	122.22	31.18

Subsequently, univariate ANOVAs were computed to investigate the effect of perfectionist group differences on all outcome variables. The ANOVAs revealed that perfectionism had statistically significant effects on all 5 DVs, all at the significance level of p = <.001, worry, $F(2, 167) = 15.56$, emotionality, $F(2, 167) = 8.32$, lack of confidence, $F(2,167) = 9.01$, interference, $F(2, 167) = 9.5$, and total TA, $F(2, 167) = 14.09$ (Appendix K).

As visualised in figure 1, Tukey-Kramer post-hoc comparisons (Appendix L) identified that MPs scored significantly higher values on the dimensions worry and total TA than NPs and APs (p = <.001). As illustrated in figure 2, on the dimensions emotionality, lack of confidence and interference, MPs scored significantly higher values than APs (p = <.001), and APs scored significantly lower than NPs (emotionality, p = .002; lack

of confidence, p = <.001; interference, p = <.001). However, MPs and NPs did not significantly differ from one another (emotionality, p = .058; lack of confidence, p = .174; interference, p = .914).

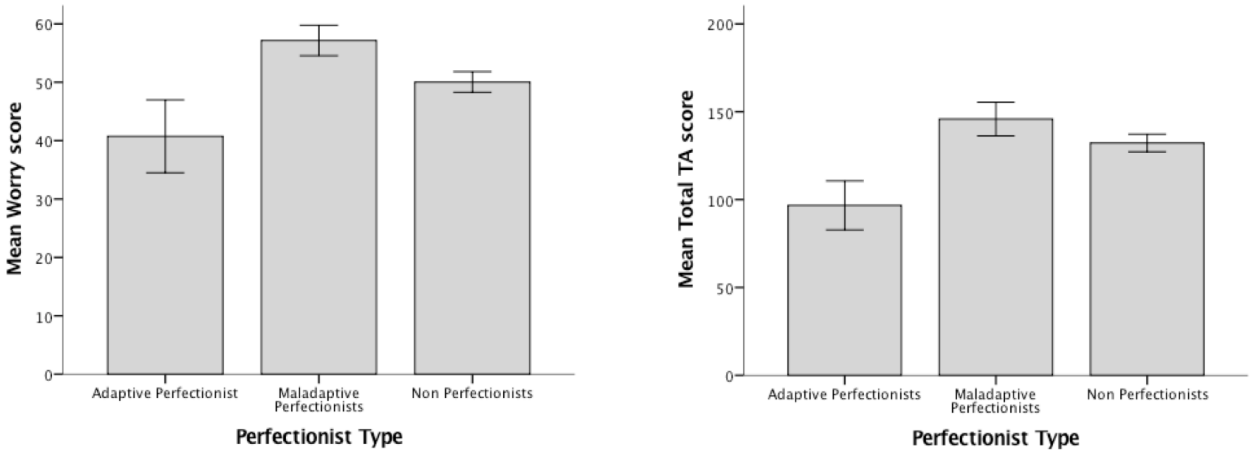


Figure 1. A visual representation of perfectionism group differences on worry scores (left panel) and total TA scores (right panel). Error bars represent 95% confidence intervals.

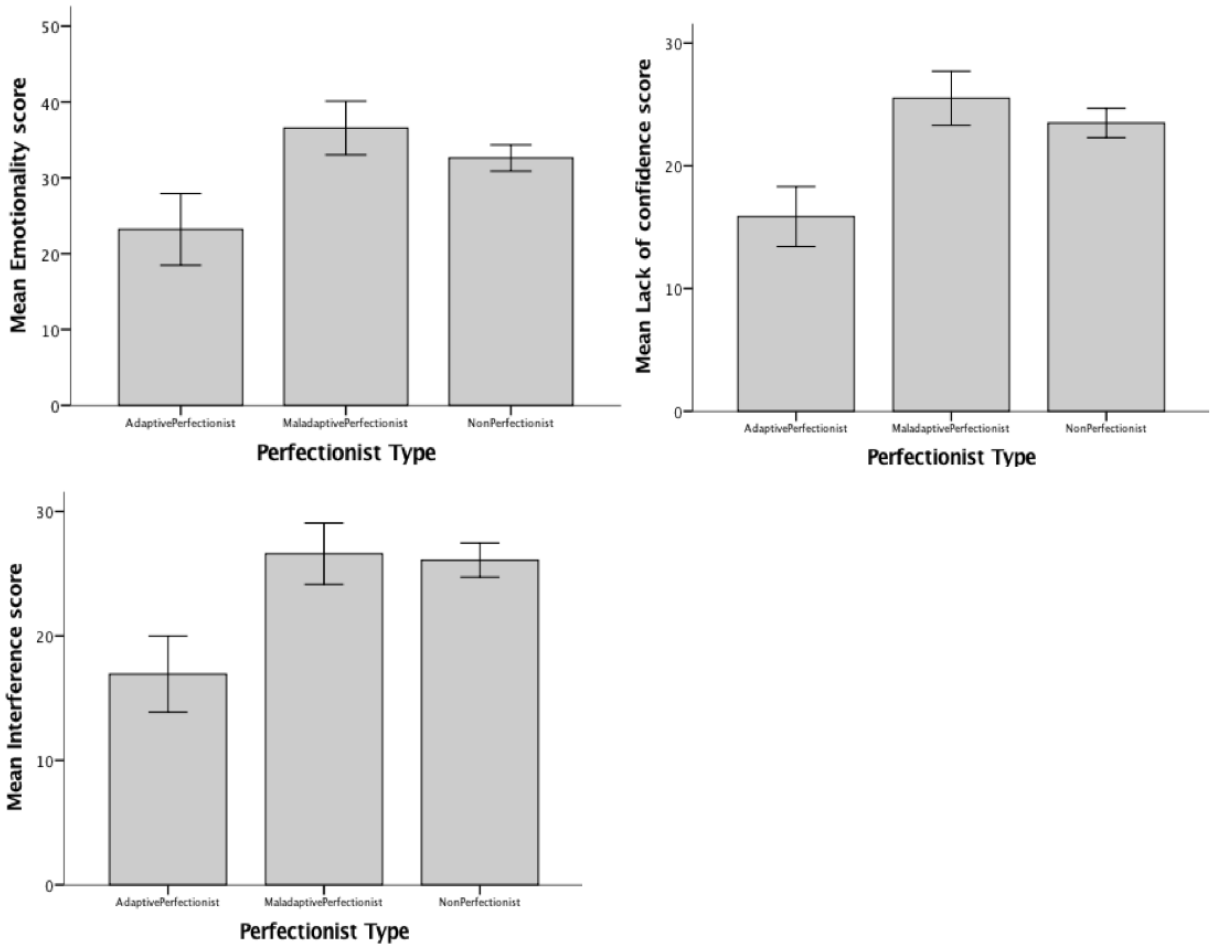


Figure 2. A visual representation of perfectionism group differences on emotionality scores (top left), lack of confidence scores (top right) and interference scores (bottom left). Error bars represent 95% confidence intervals.

Gender differences in test anxiety

Descriptive statistics of the mean and SDs for males and females on the TAI-G are presented in Table 3. A MANCOVA was used to examine whether there was an effect of gender on TA, whilst accounting for nationality (H5). The MANCOVA showed that there was a statistically significant difference between males and females on all DVs after controlling for nationality, Wilks' Λ = .874, $F(4, 167) = 6.03$, $p = <.001$, $partial\ \eta^2 = .126$ (See Appendix M for a summary).

Table 3 *Mean & SD for Test Anxiety (N = 173)*

	Females (*N* = 141)		**Males (*N* = 32)**	
Measure	**M**	**SD**	**M**	**SD**
TAI-G				
Worry	52.35	9.959	46.78	11.373
Emotionality	34.11	10.445	27.97	10.406
Lack of confidence	24.60	6.660	18.22	6.333
Interference	25.87	7.713	23.59	8.835
Total TA	136.94	29.733	116.56	32.436

Follow-up univariate ANCOVAs revealed that females reported significantly higher scores ($M_{worry} = 52.04$, $SD = .85$; $M_{emotionality} = 52.04$, $SD = .880$; $M_{lackofconfidence} = 24.57$, $SD = .56$; $M_{interference} = 25.71$, $SD = .67$; $M_{totalTA} = 136.23$, $SD = 2.54$) than males ($M_{worry} = 48.15$, $SD = 1.83$; $M_{emotionality} = 28.35$ $SD = 1.90$; $M_{lackofconfidence} = 18.37$, $SD = 1.21$; $M_{interference} = 24.29$, $SD = 1.44$; $M_{totalTA} = 119.66$, $SD = 5.47$) on the dimensions emotionality ($F(1, 170) = 5.72$, $p = .018$, $partial\ \eta^2 = .033$, lack of confidence, $F(1, 170) = 21.09$, $p = <.001$, $partial\ \eta^2 = .110$ and total TA score, $F(1, 170) = 7.38$, $p = .007$,

partial η^2 = .042 but not worry, *F*(1, 170) = 3.64, *p* = .058 and interference, *F*(4, 170) = .79, *p* = .377 (Appendix N).

Following up the significant group differences between males and females on three out of five TA dimensions, Bonferroni post-hoc tests (Appendix O) revealed that females had significantly higher scores than males on on emotionality, *p* = .018, lack of confidence, *p* = <.001 and total TA, *p* = .007) (Appendix P). A marginally significant result was found on worry, *p* = .058, but not on interference, *p* = .377 (Appendix Q).

Discussion

The two principle aims of the present study were to determine whether different variants of the trait perfectionism shared specific relationships with TA, and to ascertain whether these relationships differed between British and Danish university students. The final aim was to establish whether females would exhibit higher TA scores and to determine whether there were specific factors driving this.

The results of this study provide partial support for our hypotheses. Consistent with the prediction of H1, MPs reported the highest total TA score. Unexpectedly however, NPs reported the second highest total TA score, whilst APs reported the lowest. These findings do not support previously found associations between MPs and APs and total TA score (Bieling, Israeli & Antony, 2004). For example, Bieling et al. (2004) found a significant positive correlation between APs (*r* = 0.15) and total TAS score. Kavanagh et al. (2016) also found positive correlations between total TA score in both SPPs (*r* = .40) and SOPs (*r* = .29), which they suggest reflect the high pressures put on oneself by perfectionists. It is surprising that NPs score exceeded APs, given the documented

low self-performance standards held by NPs (e.g., Grzegorek et al., 2004). Stoeber and Otto (2006), resulting from an extensive review, described NPs as individuals with medium or low scores on all facets of perfectionism (e.g., low standards, perfectionistic concerns and discrepancy between expectations and achievements). From these prior findings for NPs, it might be expected that low standards corresponds to low pressure for oneself and thus low TA. Possible explanations for this are discussed below.

Also consistent with predictions, MPs exhibited the highest scores on emotionality, lack of confidence and interference (H2). This result supports research where MPs shared positive relationships with lack of confidence and interference as well as the finding that MP made a unique contribution to interference (Stoeber et al. 2009). These results indicate that being maladaptively perfectionistic may contribute to interfering thoughts during tests. However, contrary to expectations, MPs' scores did not significantly differ from NPs, indicating meagre group differences. The finding that APs scored significantly lower than MPs further supports Stoeber et al.'s (2009) findings that SOP was negatively associated with lack of confidence and interference. This result also supported the observed negative correlations between AP and lack of confidence (r = -.09) and interference (r = -.09) when compared to the moderate to large correlations between MP, lack of confidence (r = .63) and interference (r = .38) (Arana & Furlan, 2016).

Counter to expectations, there was no support for MPs and APs reporting similarly high levels on worry (H3). Although MPs reported the highest worry scores, NPs again reported the next highest scores and APs reported the lowest scores. This finding does not support findings of Arana and Furlan (2016) where, MPs and APs reported similarly high scores.

The finding that NPs exhibited unexpectedly high scores on all TA dimensions (H1-H3) may be explained by a couple of reasons. Firstly, the NP group were conceptualised as only residual subtype meaning higher emphasis was placed on investigating relations between APs, MPs and TA. It is crucial to acknowledge suggestions for extant subgroups within the broad NP group. For example, Dixon, Lapsley and Hanchon (2004) found evidence for a 'self-assured' NP group who exhibited low standards, low self-doubt and low concern over mistakes. This type appears to share conceptual similarities to the accepted definition of NPs. Interestingly, research by Wang, Slaney and Rice (2007) using cluster analysis identified an (unnamed) cluster with low standards, but high discrepancy scores who reported higher anxiety than other clusters but shared similarities to NPs and MPs. Supporting this, Boone, Soenens, Braet and Goossens (2010) found evidence for a cluster which they labelled 'pure evaluative concerns', characterising persons with low standards but elevated concerns who differed from 'nonperfectionists' (who exhibited low standards and evaluative concerns). As the defining feature of a NP is low standards, it is plausible that whilst some NPs report low discrepancy scores, others may report high discrepancy. This seems evident when comparing the two aforementioned clusters that have suggestively been ignored in the literature.

Secondly, the high scores of NPs may be explained by the method in which participants were categorised. In this study, Rice and Ashby's (2007) suggested cut-off scores were used to distinguish perfectionists and non-perfectionists. Use of this method means that once a participant is characterised as a NP, their score on the discrepancy subscale is essentially disregarded, making it difficult to detect further NP subgroups.

Given the highly unanticipated volume of people categorised as NPs in this study, it would not be surprising to find sub variants of our NP groups. Implications are discussed below.

Another major goal of this study was to investigate whether Denmark had fewer perfectionists and more NPs (H4). Partial support was found for this. When accounting for differences in sample size, there were fewer MPs in Denmark. However, there were a similar number of APs and NPs in both samples. It was also predicted that Danes would report less total TA. There was limited support to suggest that Danish students experienced less total TA than British students based on the non-significant perfectionism*culture interaction. This was surprising given the differences in cultural orientation. Results are consistent with Kavanagh et al.'s (2016), who found no significant differences between students in Australia and the US, that are also both highly individualistic (Country Comparison, 2018). These results may suggest that, despite horizontal and vertical cultural differences, two individualistic countries may not have enough cultural differences to detect an effect. It should be noted that despite a non-significant effect of perfectionism*culture, univariate ANOVAs of culture did reveal significant effects (Appendix R) on worry, emotionality and total TA. Suggestively, controlling for confounds (discussed below) and having more equal samples sizes from each country may have affected results differently. Therefore, it is suggested that research be replicated and explored in other countries that differ on the horizontal/vertical orientation, before being disregarded completely.

Additional support for our hypotheses came from the finding that females reported significantly higher total TA scores than males (H5). This finding supports the vast body

of extant evidence where females are observed to score higher TA (e.g., Hembree, 1988; Lowe & Ang, 2012). The subsidiary prediction that higher total TA would be driven by emotionality was also supported. Some researchers have suggested that higher emotionality is females is not sufficient to drive overall higher TA score (Cassady & Johnson, 2002). Therefore, this finding should be replicated before further interpretation.

Although no specific predictions were made about the other TA dimensions, our findings were revealing. For example, females scored significantly higher on lack of confidence. To our knowledge, this dimension has not been investigated specifically comparing males and females and thus should be investigated further. Regarding interference, our results did not support previous research (e.g., Cassady & Johnson, 2002). For example, the authors proposed that one negative consequence for females regarding test situations as threatening rather than challenging, is that it negatively affects performance through cognitive interference. In this study, there was no gender differences on interference. This results supports that of Ringeisen et al. (2010) who also found no gender differences on interference. As there is currently limited gender data regarding interference, this finding requires further replication before conclusions can be drawn. Finally, the non-significant sex on worry adds to a large body of research, which found no sex differences (e.g., Cassady & Johnson, 2002; Ringeisen et al., 2010; Rana & Mahmood, 2010).

Limitations and future research

The present study was not without shortcomings regarding design and measurements. Firstly, the data was retrospective, requiring participants to “think back” to their

thoughts and feelings in their most recent exam. This data is susceptible to recall bias (Rothwell, n.d.). Further, time of last exam was not measured in the present study and may differ widely among participants, as well as influencing the quality of TA reports. Future research should control for this to ensure that the self-report data is accurate. Additionally, only self-report measures were used, which are prone to response bias. Future research could employ other methods to collect data on TA including direct observation and qualitative methods to investigate whether our findings are replicated. Other potential confounds included valence and relevance of students' most recent exam. These factors are documented to affect TA symptomology such as interference (Keogh, Bond, French, Richards & Davis, 2004) and may affect accuracy of TA reports. For example, a student who perceives their most recent exam as having gone successful and as highly relevant to their overall degree may report substantially different TA symptoms to a student who perceives their most recent exam to have gone badly.

There was also a gender imbalance across both samples with a significantly larger proportion of females. This represents the female to male ratio of Psychology students, who made up the majority of the British sample. Therefore, our sample does not represent the gender ratio of students in higher education. More importantly, this imbalance may have affected the results and limits the generalisability of findings. Thus, replication is necessary before conclusions are drawn on where gender differences in TA lie. Due to recruitment of British students through SONA, it was easy to identify that the majority majored in Psychology. However, as degree subject was not measured in the survey, the degree subject of the Danish sample was not known. Given the well-documented literature of high perfectionism prevalence rates in certain

subjects (E.g., medicine - Enns, Cox, Sareen & Freeman, 2001), degree type is likely to affect both perfectionism and TA and should be taken into account in future research.

With the evidence of non-perfectionistic subgroups in mind, it is suggested that future research should not discount this perfectionist group as a residual subtype. In doing so, researchers may be discounting a large group of people who may experience the same disadvantages or drawbacks as MPs (i.e., high discrepancy between expectations and achievements) and thus should not be ignored. As evidence has demonstrated, these people may also experience the same high levels of test anxiety symptomology as MPs. Due to the categorisation perfectionists and NPs, potential for NP subgroups were not examined further in the present study and therefore should be investigated further future research.

Finally, university rankings were not accounted for. Although the majority of participants came from AU, Denmark and UoR, England, there were participants who came from other British universities. Suggestively, levels of perfectionism and related test anxiety levels will be affected depending on university standing. For example, students at universities in the country's top 30 ranking list may experience more pressure than universities that range from ranks 30-100. Therefore, this must be accounted for to meaningfully compare students on perfectionism and TA.

Conclusion

The objectives of this research were: to investigate the personality trait perfectionism in relation to various dimensions of TA; examine how these factors were influenced across two individualistic countries which differ on cultural orientation; explore whether

gender impacts the experience of TA. Consideration of knowledge from the extant literature in combination with our findings indicates particular patterns between perfectionism types and TA dimensions. Maladaptively perfectionistic students appear to experience the highest levels of TA symptomology, which are consistently higher than their adaptive perfectionistic counterparts. NPs also exhibit similarly highly on TA dimensions, although this finding is suggested to result from conceptualising this group as a residual perfectionist subtype and thus requires further investigation. Cultural differences were not observed to have an effect on perfectionism or TA, although this null finding should be replicated before any conclusions are drawn, given previous education satisfaction differences found (e.g., Ferguson et al. 2011). Finally, this study extends previous research into gender differences in TA by indicating specific unique relationships observed in females although further investigation of these relationships is recommended.

References

Arana, F. G., & Furlan, L. (2016). Groups of perfectionists, test anxiety, and pre-exam coping in Argentine students. *Personality and Individual Differences*, *90*, 169-173.

Bandalos, D. L., Yates, K., & Thorndike-Christ, T. (1995). Effects of math self-concept, perceived self-efficacy, and attributions for failure and success on test anxiety. *Journal of Educational Psychology*, *87*(4), 611.

Bieling, P. J., Israeli, A. L., & Antony, M. M. (2004). Is perfectionism good, bad, or both? Examining models of the perfectionism construct. *Personality and individual differences*, *36*(6), 1373-1385.

Bieling, P. J., Israeli, A., Smith, J., & Antony, M. M. (2003). Making the grade: The behavioural consequences of perfectionism in the classroom. *Personality and Individual Differences*, *35*(1), 163-178.

Blackler, K. (2011). *The effect of adaptive perfectionism, maladaptive perfectionism, and feedback on procrastination behaviour* (Doctoral dissertation).

Bodas, J., & Ollendick, T. H. (2005). Test anxiety: A cross-cultural perspective. *Clinical Child and Family Psychology Review*, *8*(1), 65-88.

Booth, M. (2014). *The almost nearly perfect people. The truth about the Nordic miracle*. London: Jonathan Cape.

British Social Hierarchy. (n.d.). Retrieved from https://www.hierarchystructure.com/british-social-hierarchy/.

Burns, D. D. (1980). The perfectionist's script for self-defeat. *Psychology today*, *14*(6), 34-52.

Cassady, J. C., & Johnson, R. E. (2002). Cognitive test anxiety and academic performance. *Contemporary educational psychology*, *27*(2), 270-295.

Chapell, M. S., Blanding, Z. B., Silverstein, M. E., Takahashi, M., Newman, B., Gubi, A., & McCann, N. (2005). Test anxiety and academic performance in undergraduate and graduate students. *Journal of educational Psychology*, *97*(2), 268.

Country Comparison. (2018). Retrieved from https://www.hofstede-insights.com/country-comparison/australia,the-usa/.

Deffenbacher, J. L. (1980). Worry and emotionality in test anxiety In I. G. Sarason, (Ed.), *Test anxiety: Theory, research, and applications* (pp. 111–124). Hillsdale, NJ: Erlbaum.

Enns, M. W., Cox, B. J., Sareen, J., & Freeman, P. (2001). Adaptive and maladaptive perfectionism in medical students: a longitudinal investigation. *Medical education*, *35*(11), 1034-1042.

Eum, K., & Rice, K. G. (2011). Test anxiety, perfectionism, goal orientation, and academic performance. *Anxiety, Stress, & Coping*, *24*(2), 167-178.

Everitt, B. S. (1979). A Monte Carlo investigation of the robustness of Hotelling's one- and two-sample T 2 tests. *Journal of the American Statistical Association*, *74*(365), 48-51.

Ferguson, Y. L., Kasser, T., & Jahng, S. (2011). Differences in life satisfaction and school satisfaction among adolescents from three nations: The role of perceived autonomy support. *Journal of Research on Adolescence*, *21*(3), 649-661.

Field, A. (2009). *Discovering statistics using SPSS*. Sage publications.

Flett, G. L., & Hewitt, P. L. (2002). Perfectionism and maladjustment: An overview of theoretical, definitional, and treatment issues.

Frost, R. O., Heimberg, R. G., Holt, C. S., Mattia, J. I., & Neubauer, A. L. (1993). A comparison of two measures of perfectionism. *Personality and individual differences*, *14*(1), 119-126.

Grzegorek, J. L., Slaney, R. B., Franze, S., & Rice, K. G. (2004). Self-Criticism, Dependency, Self-Esteem, and Grade Point Average Satisfaction Among Clusters of Perfectionists and Nonperfectionists. *Journal of Counseling Psychology*, *51*(2), 192.

Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2006). Multivariate data analysis 6th ed. *Uppersaddle River: Pearson Prentice Hall*.

Hamachek, D. E. (1978). Psychodynamics of normal and neurotic perfectionism. *Psychology: A Journal of Human Behavior*.

Harpell, J. V., & Andrews, J. J. (2010). Administrative leadership in the age of inclusion: Promoting best practices and teacher empowerment. *The Journal of Educational Thought (JET)/Revue de la Pensée Educative*, 189-210.

Hembree, R. (1988). Correlates, causes, effects, and treatment of test anxiety. *Review of educational research*, *58*(1), 47-77.

Herrigel, C. (2011). Test Anxiety in University Students: Identification of Inherent and Acquired Factors as a Basis for Effective Interventions.

Hodapp, V. (1991). Das Prüfungsängstlichkeitsinventar TAI-G: Eine erweiterte und modifizierte Version mit vier Komponenten. [The Test Anxiety Inventory TAI-G: An extended and modified version with four components]. *Zeitschrift für Pädagogische Psychologie/German Journal of Educational Psychology*.

Hodapp, V. (1995). The TAI-G: A multidimensional approach to the assessment of test anxiety. *Stress, anxiety, and coping in academic settings*, 95-130.

Hodapp, V., & Benson, J. (1997). The multidimensionality of test anxiety: A test of different models. *Anxiety, Stress, and Coping*, *10*(3), 219-244.

Hodapp, V., Glanzmann, P. G., & Laux, L. (1995). Theory and measurement of test anxiety as a situation-specific trait.

Kavanagh, B. E., Ziino, S. A., & Mesagno, C. (2016). A Comparative Investigation of Test Anxiety, Coping Strategies and Perfectionism between Australian and United States Students. *North American Journal of Psychology*, *18*(3), 555.

Keogh, E., Bond, F. W., French, C. C., Richards, A., & Davis, R. E. (2004). Test anxiety, susceptibility to distraction and examination performance. *Anxiety, Stress & Coping*, *17*(3), 241-252.

Khani, S., Abdi, H., & Norhbezare, D. (2013). A comparison of adaptive and maladaptive perfectionists and non-perfectionists. *European Journal of Experimental Biology*, *3*(2), 608-612.

Klibert, J. J., Langhinrichsen-Rohling, J., & Saito, M. (2005). Adaptive and maladaptive aspects of self-oriented versus socially prescribed perfectionism. *Journal of College Student Development*, *46*(2), 141-156.

Liebert, R. M., & Morris, L. W. (1967). Cognitive and emotional components of test anxiety: A distinction and some initial data. *Psychological reports*, *20*(3), 975-978.

Lo, A., & Abbott, M. J. (2013). Review of the theoretical, empirical, and clinical status of adaptive and maladaptive perfectionism. *Behaviour Change*, *30*(2), 96-116.

Lowe, P. A., & Ang, R. P. (2012). Cross-cultural examination of test anxiety among US and Singapore students on the Test Anxiety Scale for Elementary Students (TAS-E). *Educational Psychology*, *32*(1), 107-126.

Lundh, L. G., Saboonchi, F., & Wångby, M. (2008). The role of personal standards in clinically significant perfectionism. A person-oriented approach to the study of patterns of perfectionism. *Cognitive Therapy and Research*, *32*(3), 333-350.

Martin, J. L., & Ashby, J. S. (2004). Appraising perfection: The relationship of multidimensional perfectionism and intellectual development in college students. *Journal of College Student Psychotherapy*, *18*(4), 61-74.

McDonald, A. S. (2001). The prevalence and effects of test anxiety in school children. *Educational psychology*, *21*(1), 89-101.

Mills, J. S., & Blankstein, K. R. (2000). Perfectionism, intrinsic vs extrinsic motivation, and motivated strategies for learning: A multidimensional analysis of university students. *Personality and Individual Differences*, *29*(6), 1191-1204.

Mellish, K. X. (2014, March 30). *Raising children in Denmark: if their social life's OK, academic success will follow* [Audio podcast]. Retrieved from https://itunes.apple.com/gb/podcast/how-to-live-in-denmark-podcasts/id665878071?mt=2.

Mobley, M., Slaney, R. B., & Rice, K. G. (2005). Cultural validity of the Almost Perfect Scale--Revised for African American college students. *Journal of Counseling Psychology*, *52*(4), 629.

Morris, L. W., & Liebert, R. M. (1970). Relationship of cognitive and emotional components of test anxiety to physiological arousal and academic performance. *Journal of Consulting and Clinical Psychology*, *35*(3), 332.

Nelson, M. R., & Shavitt, S. (2002). Horizontal and vertical individualism and achievement values: A multimethod examination of Denmark and the United States. *Journal of Cross-Cultural Psychology*, *33*(5), 439-458.

Neumeister, K. L. S. (2004). Interpreting successes and failures: The influence of perfectionism on perspective. *Journal for the Education of the Gifted*, *27*(4), 311-335.

O'brien, R. G., & Kaiser, M. K. (1985). MANOVA method for analyzing repeated measures designs: an extensive primer. *Psychological bulletin*, *97*(2), 316.

Pacht, A. R. (1984). Reflections on perfection. *American psychologist*, *39*(4), 386.

Periasamy, S., & Ashby, J. S. (2002). Multidimensional perfectionism and locus of control: Adaptive vs. maladaptive perfectionism. *Journal of College Student Psychotherapy*, *17*(2), 75-86.

Putwain, D. W. (2007). Test anxiety in UK schoolchildren: Prevalence and demographic patterns. *British Journal of Educational Psychology*, *77*(3), 579-593.

Putwain, D. W. (2009). Situated and contextual features of test anxiety in UK adolsecent students. *School Psychology International*, *30*(1), 56-74.

Putwain, D. W., Connors, L., & Symes, W. (2010). Do cognitive distortions mediate the test anxiety–examination performance relationship?. *Educational Psychology*, *30*(1), 11-26.

Rana, R. A., & Mahmood, N. (2010). The Relationship between Test Anxiety and Academic Achievement. *Bulletin of Education and Research, 32*(2), 63-74.

Rice, K. G., & Ashby, J. S. (2007). An efficient method for classifying perfectionists. *Journal of Counseling Psychology*, *54*(1), 72.

Rice, K. G., Ashby, J. S., & Gilman, R. (2011). Classifying adolescent perfectionists. *Psychological Assessment*, *23*(3), 563.

Rice, K. G., Ashby, J. S., & Slaney, R. B. (1998). Self-esteem as a mediator between perfectionism and depression: A structural equations analysis. *Journal of counseling psychology*, *45*(3), 304.

Rice, K. G., & Slaney, R. B. (2002). Clusters of perfectionists: Two studies of emotional adjustment and academic achievement. *Measurement and Evaluation in Counseling and Development*, *35*(1), 35.

Rice, K. G., Ashby, J. S., & Slaney, R. B. (2007). Perfectionism and the five-factor model of personality. *Assessment*, *14*(4), 385-398.

Rice, K. G., Richardson, C. M., & Ray, M. E. (2016). Perfectionism in academic settings. In *Perfectionism, health, and well-being* (pp. 245-264). Springer, Cham.

Riley, C., & Shafran, R. (2005). Clinical perfectionism: A preliminary qualitative analysis. *Behavioural and cognitive Psychotherapy*, *33*(3), 369-374.

Ringeisen, T., Buchwald, P., & Hodapp, V. (2010). Capturing the multidimensionality of test anxiety in cross-cultural research: An English adaptation of the German Test Anxiety Inventory. *Cognition, Brain, Behavior. an Interdisciplinary Journal*, *14*(4), 347-364.

Rothwell, J. (n.d.). *Types of trials.* Retrieved from: https://www.sheffield.ac.uk/polopoly_fs/1.../file/stcp-rothwell-types_of_trials.

Sandemose, A. (1933). A refugee crosses his tracks. *Norway: H. Aschehoug. (W. Nygaard)*.

Sarason, I. G. (1984). Stress, anxiety and cognitive inference: reactions to tests. Journal of Personality and Social Psychology, 46, 929–938.

Savage, M., Devine, F., Cunningham, N., Taylor, M., Li, Y., Hjellbrekke, J., ... & Miles, A. (2013). A new model of social class? Findings from the BBC's Great British Class Survey experiment. *Sociology*, *47*(2), 219-250.

Schwarzer, R., & Jerusalem, M. (1992). Advances in anxiety theory: A cognitive process approach. In K. A. Hagtvet & T. B. Johnsen (Eds.), *Advances in test anxiety research* (Vol. 7, pp. 2–31). Lisse, The Netherlands: Swets & Zeitlinger.

Seipp, B., & Schwarzer, C. (1996). Cross-cultural anxiety research: A review. *Stress, anxiety, and coping in academic settings*, 13-68.

Shafran, R., Cooper, Z., & Fairburn, C. G. (2002). Clinical perfectionism: A cognitive–behavioural analysis. *Behaviour research and therapy*, *40*(7), 773-791.

Shavitt, S., Johnson, T. P., & Zhang, J. (2011). Horizontal and vertical cultural differences in the content of advertising appeals. *Journal of international consumer marketing*, *23*(3-4), 297-310.

Shavitt, S., Torelli, C. J., & Riemer, H. (2010). Horizontal and vertical individualism and collectivism. *Advances in culture and psychology*, *1*, 309-350.

Slaney, R. B., Rice, K. G., Mobley, M., Trippi, J., & Ashby, J. S. (2001). The revised almost perfect scale. *Measurement and evaluation in counseling and development*, *34*(3), 130.

Smith, R. A. (1971). The effect of unequal group size on Tukey's HSD procedure. *Psychometrika*, *36*(1), 31-34.

Stöber, J. (2004). Dimensions of test anxiety: Relations to ways of coping with pre-exam anxiety and uncertainty. *Anxiety, Stress & Coping*, *17*(3), 213-226.

Stoeber, J., & Otto, K. (2006). Positive conceptions of perfectionism: Approaches, evidence, challenges. *Personality and social psychology review*, *10*(4), 295-319.

Stoeber, J., Feast, A. R., & Hayward, J. A. (2009). Self-oriented and socially prescribed perfectionism: Differential relationships with intrinsic and extrinsic motivation and test anxiety. *Personality and Individual Differences*, *47*(5), 423-428.

Suddarth, B. H., & Slaney, R. B. (2001). An investigation of the dimensions of perfectionism in college students. *Measurement and Evaluation in Counseling and development*, *34*(3), 157.

Triandis, H. C. (1995). *Individualism & collectivism*. Westview press.

Triandis, H. C., & Gelfand, M. J. (1998). Converging measurement of horizontal and vertical individualism and collectivism. *Journal of Personality and Social Psychology*, *74*(1).

Van Teijlingen, E. R., & Hundley, V. (2001). The importance of pilot studies. *Social research update*, *35*(4), 1-4.

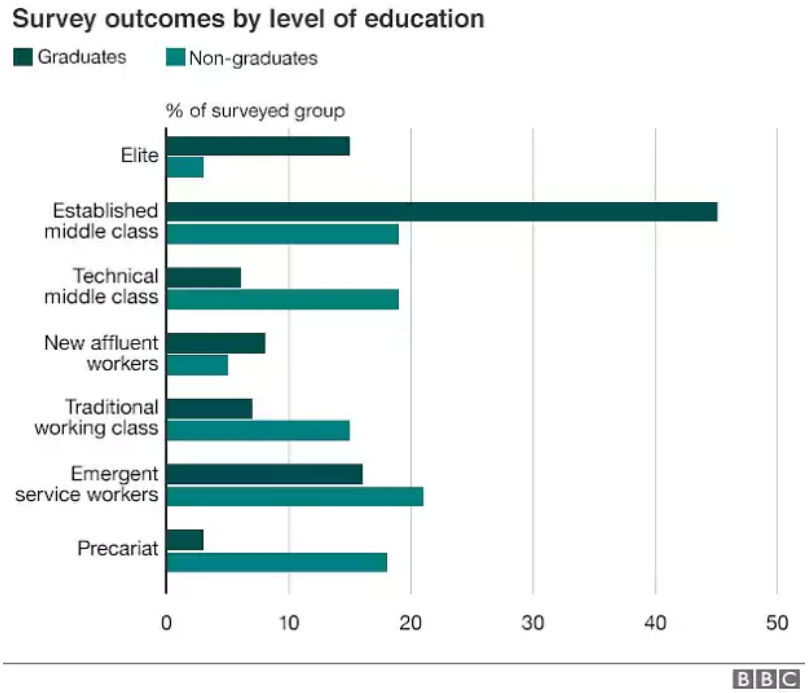
Weiner, B. A., & Carton, J. S. (2012). Avoidant coping: A mediator of maladaptive perfectionism and test anxiety. *Personality and Individual Differences*, *52*(5), 632-636.

Zeidner, M. (1998). *Test anxiety: The state of the art*. Springer Science & Business Media.

Zeidner, M., & Mathews, G. (2005). Evaluation anxiety. In A.J. Elliot and C.S. Dweck (Eds.), Handbook of competence and motivation (pp. 141–163). London: Guildford Press.

Appendices

Appendix A



Appendix B

Danish pilot participant feedback comments

Pilot questions:

1. How did you find completing the questionnaire as a non-native English speaker?
2. Did you have any difficulties interpreting what the questions were asking (due to language barrier (or for any other reasons)?

Participant #1

Q1: ”In regards to language barrier, I didn’t have too many problems, though I had to look up the words ‘excellence’ and ‘up-tight’.

Q2: “Most questions with ‘best’ I was unsure from what perspective it was to be interpreted.. With “doing my best never seems to be good enough” is that to myself or to others?”
“In regards to some of the examination questions: Are they in relation to my own standards or the universities? Such as question 26 (I think I will succeed). Is that “pass”, “highest grade” or “my standards”?”

Participant #2

Q1: “A little bit confusing, at times. I had to re-read some of the questions to understand what was being asked”

Author: “After reading it a couple of times, did you feel you understood what was being asked?”

“Yeah”

Q2: “No. Just some of them [the questions] seemed kinda like the same, just asking the opposite”

Participant #3

Q1: “I found it understandable”

Q2: “No”

Participant #4

Q1: “I was a bit unsure about the meaning of “feeling uneasy” Otherwise it was fine

Q2: “No, but I felt that questions 7 and 9 were sort of the same. But other than that, it was good. And I think it’s good that it doesn’t have too many questions, because that would probably make some people not want to participate”

Participant #5
Q1: “It was fine”

Q2: “No”

Pilot questions (for British sample)

1. Did you understand all the questions e.g., did you encounter any difficulties completing the survey?

2. Is there anything that you would have changed to make it more understandable?

None of the 8 British university students reported any difficulties with completing the survey or any comprehension problems

No comments were given in response to Q2

Appendix C

Demographic data

Please answer all of the following questions.

1. Full name:

2. Please enter your email address:

3. Age (years)

4. Which gender do you identify with?

   Male

   Female

   Neither

5. In which country did you attend high school education?

   England

   Denmark

6. In which country do you currently attend university?

   England

   Denmark

7. * For Danish students only: What semester are you currently in?

1st semester | 4th semester

2nd semester | 5th semester

3rd semester | 6th semester

8. *For English students only: Which academic year of your undergraduate degree are you currently in?

1st year

2nd year

3rd year

9. What is your native language?

English

Danish

Appendix D

For the following questions, please rate your level of agreement with each statement using the 7-point scale.

1 = strongly disagree
2 = disagree
3 = slightly disagree
4 = neutral
5 = slightly agree
6 = agree
7 = strongly agree

Important: Please only answer the questions in the context of your academic life.

1. I often feel frustrated because I can't meet my goals.

2. The best just never seems to be good enough for me.

3. I rarely live up to my high standards.

4. Doing my best never seems to be good enough.

5. I am never satisfied with my accomplishments.

6. I often worry about not measuring up to my own expectations.

7. My performance rarely measures up to my standards.

8. I am not satisfied even when I know I have done my best.

9. I am seldom able to meet my own high standards for performance.

10. I am hardly ever satisfied with my performance.

11. I hardly ever feel that what I've done is good enough.

12. I often feel disappointment after completing a task because I know I could have done better.

13. I have high standards for my performance at university.

14. If you don't expect much out of yourself, you will never succeed.

15. I have high expectations for myself.

16. I set very high standards for myself.

17. I expect the best from myself.

18. I try to do my best at everything I do.

19. I have a strong need to strive for excellence.

20. I am an orderly person.

21. Neatness is important to me.

22. I think things should be put away in their place.

23. I like to always be organised and disciplined.

The Almost Perfect Scale Revised (Slaney, Rice, Mobley, Trippi & Ashby, 2001).

Appendix E: The German Test Anxiety Inventory; English version

For the following statements, please think back to the last time that you were in an academic test situation. For each item, please rate your level of agreement using the 7-point scale.

1 = strongly disagree
2 = disagree
3 = slightly disagree
4 = neutral
5 = slightly agree
6 = agree
7 = strongly agree

1. I am confident about my performance.

2. I think about how important the examination is for me.

3. I get "butterflies".

4. I think about my abilities.

5. Distracting thoughts keep "popping" into my head.

6. I worry about whether I can cope with being examined.

7. I am "up-tight".

8. I have faith in my own performance.

9. I am thinking about the consequences of failing.

10. I ask myself whether my performance will be good enough.

11. I am preoccupied by other thoughts which distract me.

12. I feel uneasy.

13. I know that I can rely on myself.

14. I think about how important it is for me to receive a good result.

15. I easily lose my train of thoughts.

16. My heart pounds.

17. I worry about my results.

18. I feel anxious.

19. I forget things because I am too preoccupied with my personal problems.

20. I am satisfied with myself.

21. I am concerned about my grades.

22. I tremble with fear.

23. I worry that something might go wrong.

24. My concentration is interrupted by interfering thoughts.

25. I feel overwhelmed.

26. I think that I will succeed.

27. I think about what will happen if I don't do well.

28. I feel upset.

29. I am convinced that I will do well.

30. I have the feeling everything is so difficult for me.

The German Test Anxiety Inventory; English version (Hodapp & Benson, 1997).

Appendix F: School Research Ethics Committee approval

The above application has SREC approval and may proceed to UREC.

Attached the signed forms.

Anastasia

Dr Anastasia Christakou
Associate Professor in Cognitive Neurobiology
Centre for Integrative Neuroscience & Neurodynamics
School of Psychology & Clinical Language Sciences
University of Reading
anastasia.christakou.org

Appendix G: University Research Ethics Committee Approval

Dear Allan

Attached, please find confirmation of the Favourable Opinion in respect of your recent application: UREC 17/60: Investigating groups of perfectionists and differential relationships with test anxiety: a cross-cultural comparison between English and Danish students.

With kind regards

Mike

Dr Mike Proven | Coordinator for Quality Assurance in Research (**UREC Secretary**) | Academic and Governance Services | The University of Reading, Whiteknights, Reading, RG6 6AH | Tel + 44(0)118 378 7119 |

Appendix H: Information sheet

University of Reading

The University of Reading

School of Psychology

Earley Gate, Whiteknights
PO Box 238, Reading RG6 6AL, UK

phone +44 (0)118 378 8523
fax +44 (0)118 378 6715

Title of Study: Investigating types of perfectionism and the effects of test anxiety in English and Danish undergraduate students

Information Sheet

Supervisors:	Email:	Phone:
Dr. Allán Laville	a.laville@reading.ac.uk	0118 3784681
Dr. Patricia Riddell	p.m.riddell@reading.ac.uk	0118 3786699

Experimenters:

[redacted] [redacted]?@student.reading.ac.uk
[redacted]@student.reading.ac.uk

We would be grateful to you if you could assist us by participating in our study exploring types of perfectionism and test anxiety. The study is specifically interested in whether types of perfectionism correspond to different types of test anxiety.

Your participation will take approximately 10 minutes, during which time you will complete a battery of questionnaires.

Your data will be kept confidential and securely stored, with only an anonymous number identifying it. Information linking that number to your name will be stored securely and separately from the data you provide us. All information collected for the project will be destroyed after a period of 12 months from the completion of the project. Taking part in this study is completely voluntary; you may withdraw at any time without having to give any reason. Please feel free to ask any questions that you may have about this study at any point.

This application has been reviewed by the University Research Ethics Committee and has been given a favourable ethical opinion for conduct

Thank you for your help.

Appendix I: Consent form

CONSENT FORM

I, ... agree to participate in the study, being conducted by [redacted] and [redacted] at The University of Reading. I have seen and read a copy of the Participants Information Sheet. I have been given the opportunity to ask questions about the study and these have been answered to my satisfaction. I understand that all personal information will remain confidential to the investigator and arrangements for the storage of any identifiable material has been made clear to me. I understand that the data collected from me in this study will be preserved, and will be made available to other authenticated researchers only if they agree to maintain the confidentiality of the information provided to them. I understand that participation in this study is voluntary and that I can withdraw at any time without having to give an explanation.

I am happy to proceed and participate in the study.

Q1: I have read the information sheet and been given the opportunity to ask any questions about the study. I consent voluntarily to be a participant in this study. *

1. Yes
2. No

Q2: Full name. Please note: Your full name will be taken as your signature to confirm your consent. *

.....

Appendix J: MANOVA summary

Summary Multivariate Analysis of Variance (MANOVA) table

Effect	Wilks' Λ	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Intercept	.062	620.13	4.00	164.00	.000	.938
Perfectionism	.774	5.61	8.00	328.00	.000	.120
Culture	.960	1.72	4.00	164.00	.148	.040
Perfectionism*Culture	.972	.58	8.00	328.00	.794	.014

Appendix K: Follow-up univariate ANOVAs

Follow-up univariate ANOVAs for perfectionism

Source	Dependent Variable	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Contrast	Worry score	2662.820	2	1331.410	15.655	.000	.158
	Emotionality score	1686.189	2	843.094	8.319	.000	.091
	Lack of confidence score	789.612	2	394.806	9.014	.000	.097
	Interference score	1066.695	2	533.348	9.497	.000	.102
	Total TA score	22386.041	2	11193.021	14.090	.000	.144
Error	Worry score	14202.810	167	85.047			
	Emotionality score	16925.540	167	101.351			
	Lack of confidence score	7314.314	167	43.798			
	Interference score	9378.226	167	56.157			
	Total TA score	132659.397	167	794.368			

Appendix L: Tukey-Kramer post-hoc tests

Tukey HSD post-hoc comparisons for perfectionist groups

Dependent Variable	(I) Perfectionist Group	(J) Perfectionist Group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Worry score	AP	MP	-16.42*	2.709	.000	-22.83	-10.02
		NP	-9.29*	2.543	.001	-15.31	-3.28
	MP	AP	16.42*	2.709	.000	10.02	22.83
		NP	7.13*	1.569	.000	3.42	10.84
	NP	AP	9.29*	2.543	.001	3.28	15.31
		MP	-7.13*	1.569	.000	-10.84	-3.42
Emotionality score	AP	MP	-13.37*	2.957	.000	-20.36	-6.38
		NP	-9.43*	2.776	.002	-15.99	-2.86
	MP	AP	13.37*	2.957	.000	6.38	20.36
		NP	3.94	1.713	.058	-.11	7.99
	NP	AP	9.43*	2.776	.002	2.86	15.99
		MP	-3.94	1.713	.058	-7.99	.11
Lack of confidence score	AP	MP	-9.64*	1.944	.000	-14.24	-5.05
		NP	-7.62*	1.825	.000	-11.93	-3.30
	MP	AP	9.64*	1.944	.000	5.05	14.24
		NP	2.02	1.126	.174	-.64	4.69
	NP	AP	7.62*	1.825	.000	3.30	11.93
		MP	-2.02	1.126	.174	-4.69	.64
Interference score	AP	MP	-9.67*	2.201	.000	-14.88	-4.47
		NP	-9.16*	2.066	.000	-14.05	-4.27
	MP	AP	9.67*	2.201	.000	4.47	14.88
		NP	.51	1.275	.914	-2.50	3.53
	NP	AP	9.16*	2.066	.000	4.27	14.05
		MP	-.51	1.275	.914	-3.53	2.50
Total TA score	AP	MP	-49.11*	8.279	.000	-68.69	-29.53
		NP	-35.50*	7.771	.000	-53.88	-17.12
	MP	AP	49.11*	8.279	.000	29.53	68.69
		NP	13.61*	4.796	.014	2.27	24.95
	NP	AP	35.50*	7.771	.000	17.12	53.88
		MP	-13.61*	4.796	.014	-24.95	-2.27

Based on observed means.
The error term is Mean Square(Error) = 794.368.
*. The mean difference is significant at the .05 level.

Appendix M: MANCOVA summary table

Summary Multivariate Analysis of Covariance (MANCOVA) table

Effect	Wilks' Λ	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Intercept	.240	131.950 [b]	4.000	167.000	.000	.760
Culture	.936	2.831[b]	4.000	167.000	.026	.064
Gender	.874	6.032[b]	4.000	167.000	.000	.126

b. Exact statistic

Appendix N: Follow-up univariate ANCOVAs

Follow-up univariate ANCOVAs for gender

Source	Dependent Variable	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Contrast	Worry score	364.041	1	364.041	3.635	.058	.021
	Emotionality score	615.086	1	615.086	5.723	.018	.033
	Lack of confidence score	923.376	1	923.376	21.091	.000	.110
	Interference score	48.600	1	48.600	.785	.377	.005
	Total TA score	6599.812	1	6599.812	7.384	.007	.042
Error	Worry score	17024.398	170	100.144			
	Emotionality score	18272.330	170	107.484			
	Lack of confidence score	7442.531	170	43.780			
	Interference score	10523.855	170	61.905			
	Total TA score	151937.939	170	893.753			

Appendix O: Bonferroni post-hoc tests

Bonferroni post hoc tests for gender

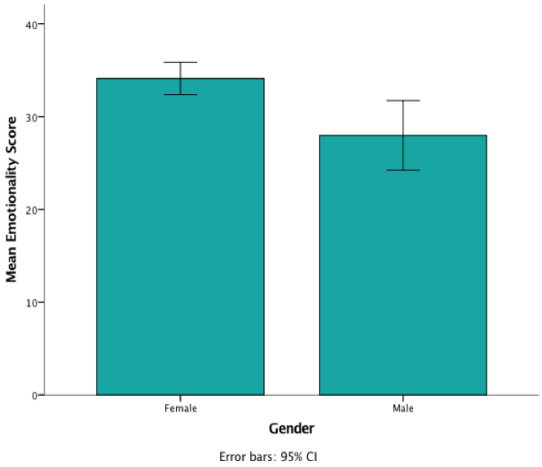
Dependent Variable	(I) Gender	(J) Gender	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b]	
						Lower Bound	Upper Bound
Worry score	Female	Male	3.891	2.041	.058	-.138	7.920
	Male	Female	-3.891	2.041	.058	-7.920	.138
Emotionality score	Female	Male	5.058*	2.114	.018	.884	9.232
	Male	Female	-5.058*	2.114	.018	-9.232	-.884
Lack of confidence score	Female	Male	6.198*	1.349	.000	3.534	8.861
	Male	Female	-6.198*	1.349	.000	-8.861	-3.534
Interference score	Female	Male	1.422	1.605	.377	-1.746	4.590
	Male	Female	-1.422	1.605	.377	-4.590	1.746
Total TA score	Female	Male	16.569*	6.097	.007	4.533	28.605
	Male	Female	-16.569*	6.097	.007	-28.605	-4.533

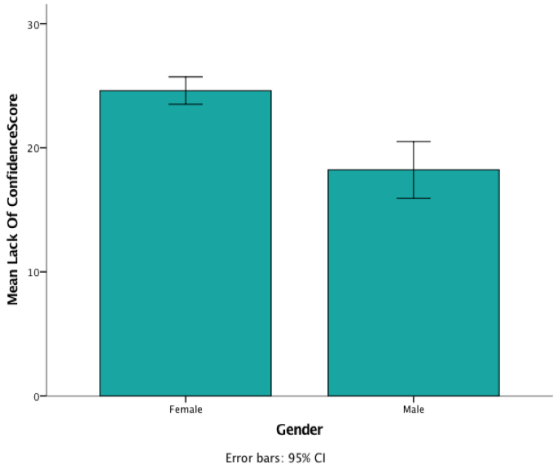
Based on estimated marginal means

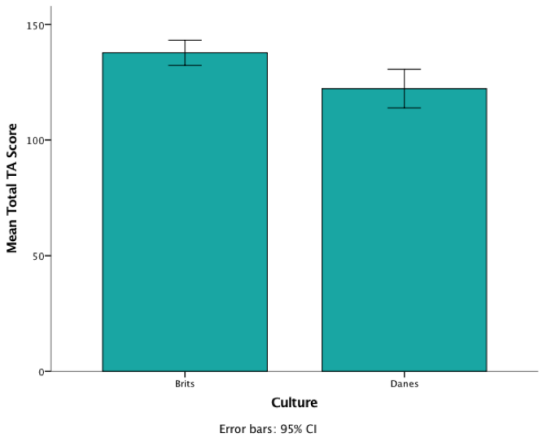
*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Bonferroni.

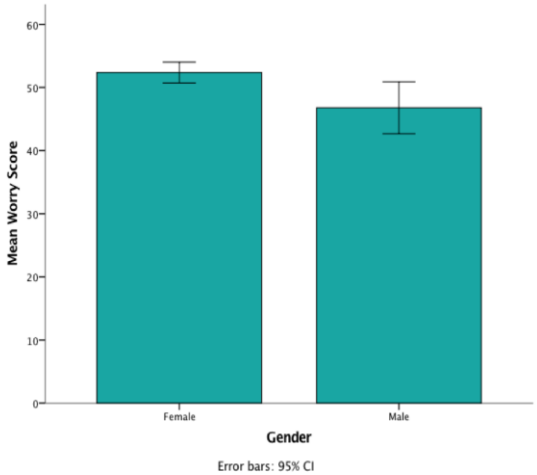
Appendix P: Visual representation of gender differences on emotionality, lack of confidence and total TA

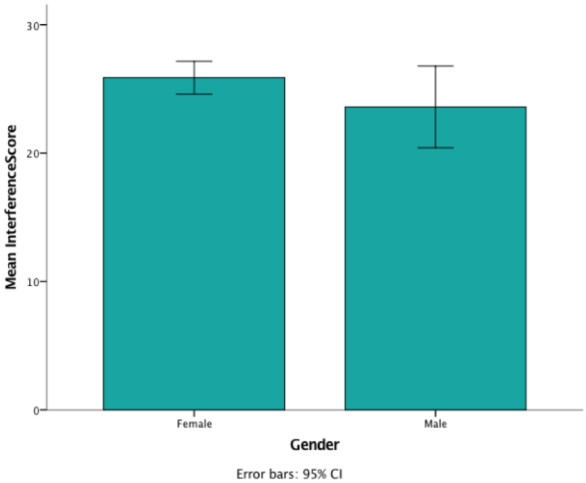






Appendix Q: Visual representation of gender differences on worry and interference





Appendix R: Univariate ANOVAs for culture (N.B Main effect non-significant)

Follow-up univariate ANOVAs for culture

Source	Dependent Variable	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Contrast	Worry score	509.393	1	509.393	5.990	.015	.035
	Emotionality score	483.785	1	483.785	4.773	.030	.028
	Lack of confidence score	16.538	1	16.538	.378	.540	.002
	Interference score	121.521	1	121.521	2.164	.143	.013
	Total TA score	3558.749	1	3558.749	4.480	.036	.026
Error	Worry score	14202.810	167	85.047			
	Emotionality score	16925.540	167	101.351			
	Lack of confidence score	7314.314	167	43.798			
	Interference score	9378.226	167	56.157			
	Total TA Score	132659.397	167	794.368			